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## **1.0 EXECUTIVE SUMMARY**

The National Park Service and Warren County are proposing to conduct a land transfer that would allow expanded development at the two entrance locations associated with the West Warren County High School, currently under construction. The purpose of the proposed action is to improve traffic flow during peak school hours.

This Environmental Assessment (EA) analyzes the impacts of the proposed action as well as the No-Action alternative on human health and the environment in accordance with the National Environmental Policy Act (NEPA) of 1969. Three parcels were considered for the land transfer between the National Park Service (NPS) and Warren County. The two parcels, currently the properties of the NPS, located on Route 340 and at the intersection of Route 340 and Criser Road, are the focus of this EA. However, the third property to be given to the NPS in exchange is a factor in some of the arguments presented in this document.

Since construction of the new high school has already begun, increased traffic and congestion is already anticipated. No alternative actions were discussed as a result of the entrance and exit designs already in place relative to the school. This report is the first draft and will be available for public review and comment through the National Park Service.

Adverse impacts to air quality and increased traffic and potential safety conditions in the area are already anticipated as a result of the new high school development. However, the proposed action is expected to benefit the overall project by controlling traffic and bus flow to reduce the risk of traffic related instances and to reduce congestion during peak school hours. Safety concerns regarding the increased number of automobiles in the area and pedestrian traffic are issues of concern relative to the new school. Two entrance and exit routes were included in the design of the new school, located on Route 340 at the main entrance and a second on Criser Road. The expansion of the turn lane at the northwest corner of the intersection between Route 340 and Criser Road (Parcel 2) is intended to relieve the increased traffic as a result of the Criser Road exit and provide a right turn lane and more space for buses with a larger turning radius. Development at the main entrance (Parcel 1) is intended to relieve the increased traffic on Route 340. The main entrance will be located directly opposite of Route 649 (Browntown Road) and a new traffic signal will be installed. The proposed action will require the two parcels on Route 340 and Criser Road to be cleared of vegetation, graded and paved. The land swap allows Warren County to provide undeveloped land to the National Park Service equal in value to that which will become the expanded entrance and exits to the school. Though under review, the proposed action is not anticipated to have an adverse effect on historic or cultural resources in the area.

## **2.0 INTRODUCTION**

The National Park Service (NPS) and Warren County are proposing to conduct a land transfer that would allow new development of turn lanes for increased traffic associated with the West Warren County High School, currently under construction. This Environmental Assessment (EA) analyzes the impacts of the proposed action as well as the No-Action alternative on human health and the environment. Three parcels were considered for the land transfer between the National Park Service (NPS) and Warren County, Figure 1. The two parcels, currently the properties of the NPS, located on Route 340 and at the intersection of Route 340 and Criser Road, are the focus of this EA. This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and implementing regulations, 40 CFR Parts 1500-1508; National Park Service Director's Order #12 and Handbook, Conservation Planning, Environmental Impact Analysis and Decision-Making; and Section 106 of the National Historic Preservation Act of 1966 as amended, and implementing regulations, 36 CFR Part 800.

### **2.1 Purpose and Need for Action**

The purpose of the proposed action is to improve traffic flow during peak school hours to reduce congestion and the risk of traffic related instances in the area. Two entrance and exit routes were included in the design of the new school located on Route 340 at the main entrance and on Criser Road. The expansion of the turn lane at the northwest corner of the intersection between Route 340 and Criser Road (Parcel 2) is intended to relieve the increased traffic as a result of the Criser Road exit and provide a right turn lane and more space for buses with a larger turning radius. Development at the main entrance (Parcel 1) is intended to relieve the increased traffic on Route 340. The main entrance will be located directly opposite of Route 649 (Browntown Road) and a new traffic signal will be installed. Without the land swap, the County would have to locate the main entrance at the existing entrance on Route 340 with a traffic signal and a traffic signal at Browntown Road. This would result in two traffic signals in close proximity, which was a concern for the Virginia Department of Transportation. The introduction of multiple traffic signals in close proximity would severely hinder traffic flow in the area.

Currently, Parcel 1 and Parcel 2 reside within the outer boundary of NPS property and within the Shenandoah National Park. The Shenandoah National Park boundary and its proximity to the proposed action is documented on the USGS topographic map (Figure 1). The land to be transferred from the county to the NPS is located adjacent to Parcel 1 at the main entrance on Route 340 as seen on the preliminary development analysis for the Eastham Property from June 20, 2003 (Figure 5, Appendix A). The land swap allows Warren County to provide undeveloped land to the NPS equal in value to that which will become the expanded entrance and exits to the school.

#### **2.1.1 History and Significance of the Park**

The Shenandoah National Park is located in the Blue Ridge Mountains of Virginia between Front Royal and Waynesboro. It is known for the scenic views from Skyline

Drive and for regeneration of flora and fauna characteristic within the Appalachian Mountains. The park began in 1926 when U.S. Congress authorized its establishment to preserve and protect over 350,000 acres of forests and farms. The park was formally established in 1936. Skyline Drive, whose entrance, south of Front Royal, is located within one mile of the proposed action. The Skyline Drive Historic District was added to the National Register of Historic Places in 1997. As a result of the significance of both the Shenandoah National Park and Skyline Drive, the NPS and Warren County came to the land swap agreement so no value will be lost to the park.

## **2.2 Project Background**

The subject area is located in Warren County southwest of Front Royal. Two properties comprise the proposed action located on Route 340 and Criser Road. Parcel 1 is located at the main entrance to the new high school on Route 340 approximately one half mile south of the entrance to Skyline Drive and approximately one mile north of the entrance to Skyline Caverns. Parcel 2 is located at the corner of Criser Road and Route 340 on the northwest corner of the intersection. Both parcels can be seen on the Parcel Location Map, Figure 1, and as previously documented on the Preliminary Development Analysis Map of the Eastham Property, Figure 5. Plats are also included for both parcels in Appendix A. The objective of the proposed action is to increase accessibility to and from the new high school. The proposed action will ultimately provide a better flow of traffic in and out of the school zone during peak student traffic.

### **2.2.1 Previous Planning**

The population of Warren County has been increasing from approximately 7%-20% based on estimates during the 2000 census and between 2000 and 2003. As a result the need for upgrades, expansions and development of new schools has increased to accommodate the growing population of children under age 18. During the initial stages of planning, design, and siting for the new school, traffic and accessibility were considered. The proposed action for increasing the entrance and exit areas was included as a potential option in the original project development plans for the new West Warren County High School. Upon approval and initiation of construction at the site on Route 340 (previously the Eastham Property), the county was able to pursue the land swap with the NPS.

### **2.2.2 Scoping**

Scoping is the effort to involve agencies, and organizations, and the public in determining the issues to be addressed in the environmental document. Among other tasks, scoping determines important issues and eliminates issues determined not to be important; allocates assignments among the interdisciplinary team members and/or other participating agencies; identifies related projects and associated documents; identifies other permits, surveys, and consultations required with other agencies; and creates a schedule that allows adequate time to prepare and distribute the environmental document for public review and comment before a final decision is made. Scoping is a process that seeks opinions and consultation from any interested agency or agency with legal jurisdiction.

This EA is the first draft available for public comment and review. Upon completion, the NPS will continue with regulatory consultation. Correspondence with the State Historic Preservation Office regarding the impact to cultural resources has already been conducted and are included in Appendix C. In addition, the Virginia Department of Game and Inland Fisheries and the Department of Conservation, Natural Heritage Division will be consulted regarding threatened and endangered wildlife and plant species. This input will be used to develop the final EA for approval.

## **2.3 Issues and Impact Topics**

NEPA requires that Federal agencies take into consideration the environmental consequences of proposed actions during the decision-making process. The intent of NEPA is to protect, restore, and enhance the environment through well-informed decision-making. The Council on Environmental Quality (CEQ) was established under NEPA to implement and oversee Federal policy in this process. To this end, the CEQ issued regulations for implementing the Procedural Provisions of NEPA (40 CFR 1500-1508).

Federal, state and local regulations are considered for the analysis of individual resources referenced in section 4.0 of this report. In addition, the following legislations have been given particular consideration:

- Clean Air Act (42 USC 7401)
- Clean Water Act (33 USC 1251)
- Endangered Species Act (ESA) (16 USC 1531-1543)
- National Historic Preservation Act of 1966 (16 USC 470 et seq., as amended)
- Resource Conservation and Recovery Act (RCRA) (42 USC 6901)

The NPS will complete an Environmental Screening Form that identifies potential issues and impact topics that require additional investigation to meet the requirements of NEPA and the NPS Director's Order #12.

### **2.3.1 Issues**

According to the Virginia Department of Transportation (VDOT), the main issue with the development of the school at this location is the karst topography known to exist within the area and at the site. It was requested that as part of the construction process, the contractor develop a detention basin for subsurface water flow. The purpose of this is to direct excess surface and storm water, caused by development of the property, away from the underground karst systems and directly into the detention basin leading to the Shenandoah River. The introduction of abnormal amounts of water into the groundwater system could affect the karst environment and increase the risk of sinkhole or other karst feature development in the area. The proposed project will also be required to design and construct appropriate curb and gutter systems that drain into the same detention pond.

A second concern is the addition of traffic signals. By constructing the main entrance directly across from Browntown Road, only one signal will be necessary. Without the land swap, the County would have to locate the main entrance at the existing entrance on Route 340 with a traffic signal and a traffic signal at Browntown Road. This would result in two traffic signals in close proximity, which was a concern for the Virginia Department of Transportation. The introduction of multiple traffic signals in close proximity would severely hinder traffic flow in the area.

### 2.3.2 Impact Topics Analyzed

Impact topics are resources of concern that could be affected, either beneficially or adversely, by the range of alternatives. Impact topics are identified on the basis of Federal laws, regulations, Executive Orders, NPS policies, NPS Director's Order #12 and from general knowledge of potentially impacted resources. Impact topics generally include items such as: historic and cultural resources, floodplain management, wetlands, threatened and endangered wildlife and vegetation, transportation and traffic, air quality, safety and security and socioeconomic resources. Specific impact topics of concern will be analyzed in further detail after the public review and comment period and will be presented in subsequent drafts as necessary.

### 3.0 ALTERNATIVES

#### 3.1 The No-Action Alternative

The no action alternative would result in increased traffic congestion and could increase the number of traffic related incidents. Once completed, the number of travelers to and from the school during peak hours will increase dramatically. Since construction of the school has already been approved and is underway, this increase is inevitable. By following the No-Action alternative, no new traffic control systems will be constructed. Ultimately, however, traffic signals would be constructed at both Browntown Road and the main entrance to the school resulting in two signals within close proximity. Increased congestion, as a result, may decrease the air quality and noise due to idle engines within the vicinity of the school and near the Shenandoah National Park.

#### 3.2 The Preferred Alternative

Since the development and construction of the new West Warren County High School has already been approved and is under way, no other alternatives were considered. It was assumed that increased traffic conditions would be inevitable based on the project at hand.

#### 3.3 The Environmentally Preferred Alternative

The environmentally preferred alternative would require no construction. However, increased traffic flow and congestion is inevitable with the construction of the new high school. The land transfer is intended to maintain the status quo of the Shenandoah National Park by returning an undeveloped parcel of equal value back into the park circuit. In addition, the parcel being transferred to the NPS is adjacent to parcel 1 and is of similar habitat to the surrounding areas allowing for little to no destruction of wildlife habitat.

#### 3.4 Alternatives Comparison Table

The following table outlines the potential impact areas further discussed in the EA as they pertain to the construction and operation of the proposed action and the No-Action alternative. No other alternatives were considered for this EA since entrance and exits to the new high school have already been developed and the proposed action is directly linked to these locations.

Table 2: Alternatives Comparison			
Potential Impact Area	Proposed Action		No-Action Alternative <sup>(1)</sup>
	Construction	Operation	
Land Use	*	*	NE
Air Quality	*	*	*
Water Resources	*	+	**
Topography and Soils	*	NE	NE
Environmental Management	NE	NE	NE
Noise	*	*	*
Transportation	*	+	**



<b>Table 2: Alternatives Comparison</b>			
<b>Potential Impact Area</b>	<b>Proposed Action</b>		<b>No-Action Alternative<sup>(1)</sup></b>
	<b>Construction</b>	<b>Operation</b>	
Prehistoric and Historic Resources	NE	NE	NE
Environmental Justice	NE	NE	NE
Utilities	NE	NE	NE
Socioeconomics	NE	NE	NE
Vegetation	*	NE	NE
Wildlife	*	NE	NE
Aesthetics	*	*	NE
Construction Effects	*	NE	NE
Public Health and Safety	*	*	**
KEY: * low adverse effect    ** moderate adverse effect    *** high adverse effect + beneficial effect    NE no adverse effect			

1. The comparison with the No-Action Alternative is based on the fact that regardless of the proposed action or the No-Action alternative, the construction of the new high school will be completed. Therefore, the No-Action alternative assumes increase traffic as a result of the school.

### 3.5 Alternatives Impact Analysis

Impacts were considered for different cultural and natural resources of the area. Comparisons were made between the proposed action and the No-Action alternative. However, numerous effects will occur and cannot be reversed as a result of the existing high school construction and would be increased by the No-Action alternative. These impacts will be discussed in further detail in section 4.0 of this report.

#### 3.5.1 Proposed Action

Based on a preliminary review of historic and cultural resources, the proposed action is not anticipated to have an adverse effect on these resources. Land use, air quality, water resources, noise, vegetation, wildlife, aesthetics, construction effects, and health and safety all have the potential to have either short or long term effects as a result of the proposed action.

Though air quality and water resources have the potential to be impacted by the proposed action, the potential is increase by the No-Action alternative, as discussed below. Vegetation and wildlife will not be losing habitat space, since the land swap is adjacent to Parcel 1 and other adjacent properties are of similar habitat. Therefore, there will be only a short-term impact on these natural resources. Though land use and aesthetics are irreversible impacts as a result of the proposed action, attempts can be made to minimize these. Construction effects will also be short term. Health and safety risks throughout construction cannot be eliminated; however, precautions can be made during construction planning.

Transportation and traffic flow is the main benefit to the proposed action. By increasing the flow of an inevitable increase in automobile, bus and pedestrian traffic, the proposed action will decrease the potential for congestions (increased air emissions and

noise) and decrease the potential for safety hazards. In addition, stormwater controls can be designed to protect the subsurface groundwater (discussed in 4.3.1 and 4.3.3).

### 3.5.2 No-Action Alternative

The No-Action alternative will have moderately different impacts on the cultural and natural resources of the area. The No-Action alternative would not be expected to impact the historic or cultural resources of the area. Nor would it be expected to impact the land use, noise, vegetation, wildlife, aesthetics or construction effects. However, impact to air quality, water resources, and health and safety would be increased by the No-Action alternative.

By not creating new turning lanes, traffic congestion will increase during peak school hours; this causes more idle engine noise in a smaller location and may have an impact on the air quality at these locations. Busses leaving the school from the Criser Road exit would have a difficult time making turns from the limited space. In addition, two traffic signals would ultimately be developed, at Browntown Road and the main entrance, resulting in two signals within close proximity. Appropriate curb and gutter systems will not be installed to redirect storm water into the detention basin if no action is taken. This increases the risk of contamination and increased subsurface water flow in an already fragile karst system. Lastly, safety for pedestrian traffic will not be considered during the No-Action alternative and could present a larger hazard for both automobile and pedestrian incidences.

## 4.0 AFFECTED ENVIRONMENT

The following sections describe the affected human and natural environment as they relate to the proposed action and no action alternative. The analysis is largely based on previous studies at nearby and adjacent properties related to the current construction, government agencies, site visits, and interviews conducted in July and August 2005.

### 4.1 Land Use

Land use surrounding the properties is primarily rural agricultural or property of the NPS and the Shenandoah National Park. The Shenandoah River borders the adjacent construction area to the north. Two entrance and exit routes were included in the design of the new school located on Route 340 at the main entrance and on Criser Road. The expansion of the turn lane at the northwest corner of the intersection between Route 340 and Criser Road (Parcel 2) is intended to relieve the increased traffic as a result of the Criser Road exit. Expansion of the main entrance (Parcel 1) is intended to relieve the increased traffic on Route 340.

Based upon information provided in the *Warren County Comprehensive Plan, 2005* and statistics on socioeconomics for the county, no disproportionately negative economic or social impact is anticipated to occur to minority or low-income communities resulting from the proposed action or no action alternative. Furthermore, minimal human health or environmental effects are anticipated to occur due to the proposed action or no action alternative.

### 4.2 Air Quality

Department of Environmental Quality (DEQ) administers the requirements of the Federal Clean Air Act and enforces State regulations regarding Virginia's air quality. A prevention of significant deterioration (PSD) area is a geographic area designated "attainment" or "unclassifiable" for any pollutant for which an air quality standard exists. Sources of air pollution in a PSD area are regulated to keep the air quality good as new businesses come into the area. Permit and control requirements vary with the classification of the area.

- **Class I Areas** – primarily national parks and wilderness areas. Few pollution impacts are allowed and some types of nearby industrial development are severely restricted.
- **Class II Areas** – limited amounts of new emissions are allowed.
- **Class III Areas** – greater amounts of new emissions are permitted. No Class II areas are currently designated in Virginia.

Virginia currently has two Class I PSD Areas: The Shenandoah National Park and the James River Face wilderness. The remainder of the State is designated Class II. The Shenandoah National Park entrance at Front Royal is located within one-mile of the proposed action. Though the property being exchanged is currently a portion of the NPS

after the exchange the county will not be required to maintain air quality standards based on Class I for those locations.

Air emissions based on increased automobile and bus traffic may have a minimal effect on the air quality in the area. In addition, heating systems associated with the new school, may add emissions to the adjacent property as well. The combination of both factors may have a minor effect on the air quality within the region, though these considerations were already made relative to the new school development and are not anticipated to be elevated as a result of the proposed action.

### **4.3 Water Resources**

Water resources include all surface water and groundwater resources located in the vicinity of the Proposed Action and the watershed areas affected by existing and potential runoff.

#### **4.3.1 Surface Water**

Based on information provided by the National Hydrography Dataset (NHD) compiled from USGS hydrography data and USEPA surface water data and information provided by DEQ, the proposed construction area is located in the South Fork Shenandoah Watershed and the Shenandoah River Basin.

The Shenandoah River Basin covers close to 3,000 square miles from Augusta County to the south to the West Virginia State line in the northeast. The subject property resides along the southeastern edge of this basin and along the South Fork of the Shenandoah River, which is characterized by a wide girth and a gradient of approximately one meter per kilometer. Over time the South Fork has downcut surfaces along the banks of the river, leaving elevated terraces behind, such as that where the new high school was sited.

This portion of the South Fork of the Shenandoah River is considered an impaired water zone based on testing and analysis conducted through DEQ. Fact sheets discussing the impairment causes and/or sources are provided for the nearby waterways within the Shenandoah River Basin in Appendix D. As a result, stormwater management was considered during the design of the new high school and ultimately the proposed action. As previously mentioned, a detention basin was required by VDOT to collect and redirect excess subsurface water that collects from storm water drainage within the developed area. Though the main purpose of this is due to the karst features in the region, it also helps to control the flow of storm water away from construction debris and potential contaminants in the area. If precautions are taken, the proposed action is anticipated to have a negligible to minimal impact on the nearby surface water.

#### **4.3.2 National Floodplain Mapping**

The Federal Emergency Management Agency (FEMA) is the administrator of the National Flood Insurance Program and provides data across the county for flood hazard assessment and mitigation. The purpose of a FEMA review determines if the subject

property and associated construction is within a 100-year or 500-year flood plain and if land use in the floodplain would increase the negative effects of flooding.

The proposed action areas are not located within 100-year or 500-year flood plains.

#### 4.3.3 Groundwater

Groundwater is an important drinking source throughout Warren County. Terrain through the County's most heavily developed areas has a great potential for groundwater contamination because of the highly developed karst systems. Improperly sited septic fields, storm water run-off, leaking underground storage tanks, leaking landfills, and dumping in sinkholes all contribute to the problem. There also is danger of flooding, habitat destruction and land subsidence. As a result, all karst terrain should be considered sensitive to development.

VDOT has requested that a detention basin for subsurface water flow be developed during the construction of the new high school. This detention basin will also collect surface and storm water from the curb and gutter system built into the new turn lanes. This detention basin will direct water away from fragile karst systems and into the Shenandoah River. The proposed action has the potential, if precautions are not taken, to have a short term and/or long term, moderate impact on groundwater based on the intricate karst hydrology and increased risk of contamination.

#### 4.4 Geology

Warren County lies within both the Valley and Ridge and the Blue Ridge Physiographic Provinces of Virginia. The proposed action areas are near the boundary between the two provinces, but lie within the Great Valley Subprovince of the Valley and Ridge. The Valley and Ridge Province runs generally north to northeast through the western portion of the county. Massanutten Mountain acts as a boundary along the western county and portions of the Valley and Ridge in this area are characterized by the mountain, footslopes, narrow ridges, flood plains and uplands developed over time by the mountains and Shenandoah River Basin. The bedrock is strongly folded and consists of mainly sandstones, siltstones, shales and limestones.

The geology of the proposed action sites are assumed based on proximity and surface features to be similar to that of the previous Eastham Property and the site of the high school construction. They are underlain by laminated dolostones and dark-grey silty limestones of the Ordovician Beekmantown Group (Rader et al., 1996). Bedrock in the vicinity of the property has been overturned and deformed along a series of unnamed, parallel faults. The straight segment of the South Fork, to the west of the high school property, follows the trace of one of these northeast-trending faults.

#### 4.4.1 Karst Review

An intensive review of karst features within the Eastham Property was conducted during development, design and siting by Terrane Environmental Co., LLC in 2002. This included a review of major karst features such as: caves, cave openings, sinkholes, sinking streams, limestone pinnacles and grikes. The proximity of the proposed action areas to the previously studied property is significant enough to assume similarities in geology and karst features.

As explained in the 2002 review, the proposed action areas are located within the Riverside Significant Karst Area (Virginia Cave Board, 1985). The Riverside Karst encompasses the northern portion of the Shenandoah National Park, the Cave Woods area, Belmont subdivision, the Skyline Cavern property, and the Snake Road area on the south. More than a dozen caves and concentrated karst features such as sinking streams, sinkholes, limestone pinnacles, and grikes are documented in the Riverside Karst Area. Portions of the Eastham Property were unable to be developed as a result of known and observed karst features. However, the proposed action sites are located within the approved construction zones and it is not anticipated that the karst in the area will present a problem for the development of the new turn lanes as long as proper subsurface water flow controls are met during and after construction.

#### 4.5 Soil Classification

The general soil characteristics at both sites are classified in the U.S. Department of Agriculture Soil Survey of Warren County as being deep and well drained with moderate surface runoff and increased erosion potential with a clayey, silty clay to cobbly clayey subsoil. The majority of the area is classified as the Dyke Loam with slopes of 7-15%. A small portion of Parcel 1 may be classified as the Lodi Loam characterized by deep well drained soil within the limestone valley.

Both soils classifications are very poorly suited for wetland plants and wildlife and have a zero percent chance of flood. Bedrock in both soil types is generally greater than 60 inches below the surface with the exception of up to 1% limestone outcroppings in the Lodi complex.

#### 4.6 Environmental Management

Hazardous waste management and disposal are not applicable to the proposed action.

#### 4.7 Noise

During construction of the proposed action, noise levels will be increased. Additional noise will be created by the increased traffic during peak school hours. However, this increase is already anticipated to occur regardless of the proposed action. Noise associated with construction would be a negligible, short-term adverse effect for the proposed action. Noise associated with increased traffic may be minimal and long term.

The No-Action alternative will add to the adverse effects from noise since traffic will not move quickly through the area, engine idle noise will be increased at intersections and during congestion.

#### **4.8 Transportation**

The proposed action will benefit the traffic flow through the area. Increased traffic due to the school is already anticipated. The transfer of property and creation of extended turning lanes and centralized main entrance with a traffic signal will reduce congestion and could reduce the risk of traffic related incidents. Transportation is expected to be a minor to moderate long-term adverse effect in the area, being minimized, but not eliminated as a result of the proposed action.

#### **4.9 Prehistoric and Historical Sites**

The purpose of a historical records review is to determine the potential effect of the proposed action on historic properties and allow associated councils or agencies an opportunity to comment on the proposed action. An area of potential effect (APE) is searched within a one-mile radius of the subject property. A review of existing information and the potentially historic areas is conducted for the site and the APE to determine if the subject property and associated proposed action may have an adverse effect on the characteristics of the historic site or area.

Based on a field survey conducted in the spring and summer of 2005, both by NPS Cultural Resource staff and archaeologists from James Madison University, it has been determined that there are no historic structures, no significant cultural landscape features, and no archaeological resources. The park consulted with the Virginia Department of Historic Resources on August 22, 2005 stating their belief that this exchange will have no effect on historic features. A response was received on August 19, 2005 stating concurrence with the NPS letter regarding cultural resources. Copies of these correspondences are included in Appendix C.

##### **4.9.1 National Register of Historic Places**

The National Register of Historic Places (NRHP) is the Nation's official list of cultural resources worthy of preservation. Authorized under the National Historic Preservation Act (NHPA) of 1966, the NRHP is part of a national program to coordinate and support public and private efforts to identify, evaluate and protect historic and archaeological resources. Properties listed in the NRHP include districts, sites, buildings, structures and objects that are significant in American history, architecture, archaeology, engineering and culture. Section 106 of the NHPA of 1966, as amended, requires that Federal agencies take into account the effect of their projects on historic properties and give another Federal agency, the Advisory Council on Historic Preservation, an opportunity to comment. Consultation with the State Historic Preservation Officer (SHPO) is the key to most projects that are reviewed.

The Skyline Drive Historic District is registered on the NRHP. The northern most entrance to the drive is located within one mile of both parcel locations; however,



construction and use of the proposed action is not anticipated to have an adverse affect on the Skyline Drive Historic District. This was verified during the SHPO consultation.

The park consulted with the Virginia Department of Historic Resources on August 22, 2005 stating their belief that this exchange will have no effect on historic features. The basis of the NPS letter is the belief that the exchange of properties will have no effect on historic features for the following reasons as stated in the letter:

1. The exchange parcels are not within the Skyline Drive Historic District and their locations west of Route #340, which has been significantly altered in the past decade, suggests that the parcels will never be associated with the District.
2. There are no historic (or any) structures on the parcels the NPS plans to exchange.
3. There are no landscape features; the tracts are both second growth scrub forest.
4. The archaeological report . . . indicates that there are no significant archaeological features associated with Parcels 1 and 2, the subject of this consultation.

A response was received on August 19, 2005 stating concurrence with the NPS letter regarding cultural resources. Copies of these correspondences are included in Appendix C.

#### 4.9.2 State Historic Places

The Virginia Department of Historic Resources (DHR) represents an interest in protecting Virginia's significant historic, architectural, archaeological, and cultural resources. The departments' role in project review is advisory and consultative, relying on practices established by Federal and state law, and on the body of information gathered through DHRs ongoing survey. Under Federal law, an historic property is any district, site, building, structure or object that meets the criteria for listing on the NRHP. The national register is a list established by the NHPA of 1966, as amended, to recognize properties for their significance in history, architecture, archaeology, engineering, or culture. Under state law, a historic property is any district, site, building, structure, or object designated by the Virginia Board of Historic Resources for listing on the Virginia Landmarks Register. The criteria are the same as those used for the National Register.

The Virginia Landmarks Register, established in 1966, is managed by the DHR. It is the State's official list of properties important to Virginia's history. The same criteria used by the DHR are used to evaluate resources for inclusion in the Virginia Landmarks Register. A review of the Virginia State Historic Places requires consultation with the SHPO.

Based on a field survey conducted in the spring and summer of 2005, both by NPS Cultural Resource staff and archaeologists from James Madison University, it has been determined that there are no historic structures, no significant cultural landscape features, and no archaeological resources. The park consulted with the Virginia Department of Historic Resources on August 22, 2005 stating their belief that this exchange will have no effect on historic features. A response was received on August 19,



2005 stating concurrence with the NPS letter regarding cultural resources. Copies of these correspondences are included in Appendix C.

#### 4.9.3 Tribal Historic Preservation

The National Association of Tribal Historic Preservation Officers (THPO) are a group, officially designated by a federally recognized Indian tribe that assumes some or all of the functions of the SHPO on Tribal lands. The National Park Services approved the THPO program and was made possible by the provisions of Section 101(d)(2) of the NHPA.

The Virginia Council on Indians (CVI) is a subcommittee created by the general assembly to gain knowledge of the historic dealings and relationship between the Commonwealth of Virginia and the Virginia Indian Tribes. The Council's duties include studies and research regarding the Indian Tribes in Virginia and making recommendations to the Commonwealth on issues regarding Virginia Indians. A list of the Indian Tribes is available through the VCI.

No recognized Indian Tribes are located within the vicinity of the subject site based on a review of the tribal databases available and through NRHP and previous SHPO correspondence.

#### 4.9.4 Archaeological Review

An archaeological review is conducted as a part of the historical review of a site. Archaeological reviews are often conducted prior to construction, highway building, leasing of Federal or state property and other projects that may disturb archaeological or historical sites. An archaeological survey was conducted for both sites by the DHR. A no adverse effect letter was released to the NPS regarding archaeology at the site and will be included with the final draft of this EA.

### 4.10 Environmental Justice

State agencies are required to identify and address, as appropriate, the potential for disproportionately high adverse human health or environmental effects of their actions on minority or low-income populations.

Neither Warren County nor the NPS directly or indirectly use criteria, methods or practices that discriminate on the basis of race, color or national origin. No disproportionately negative economic or social impact is anticipated to affect minority or low-income communities as a result of the proposed action.

### 4.11 Utilities

Utilities have been brought to the site during the initial stages of construction already in action relative to the new high school. Some utilities associated with traffic signals may be added or connected for new traffic controls.

#### **4.12 Socioeconomic Characteristics**

According to the U.S. Census Bureau for 2000, Warren County, Virginia sustained a 20.8% population increase from 1990-2000. It is estimated that from 2000-2003 an increase of approximately 7.2% occurred bringing the population of the county to approximately 33,877. As a result, the county enacted new plans to upgrade, expand and develop new schools to accommodate the growing numbers of school age children in the area. The proposed action is a result of the initial stages of construction for the new high school.

Prior to the initiation of construction of the new high school, the area was used as an independent farm and therefore did not provide significant revenue for the region. The facility is not expected to increase economic activity, but does increase the number of eligible jobs in the area and may potentially act to draw new residents to the area and therefore increase the counties tax revenue; however, the proposed action has no relevance to these socioeconomic factors.

#### **4.13 Vegetation**

Vegetation at the proposed action sites consists of woodland areas of cedar, oak, poplars and pine trees common in this region. Undergrowth consisting of vines, ferns and grasses were also observed during the site reconnaissance. The vegetation at both locations will be removed, the area graded and developed as roads. Some roadside grass or other vegetation may be planted and maintained for aesthetic purposes. The property to be transferred to the NPS has not been developed. Vegetation on this parcel will remain undeveloped woodland as a part of the Shenandoah National Park.

##### **4.13.1 Statement of Findings**

In accordance with the 2001 NPS Management Policies, Directors Order No. 77-1 for Wetland Protection and the Wetland Protection Procedural Manual, the site was reviewed for potential wetlands. A Wetlands Statement of Findings (SOF) is required if wetlands or streams are present on the site. The site reconnaissance, a review of available map resources of the area, the Warren County Soil Survey, and the National Wetlands Inventory (discussed below) mapping services revealed no evidence of streams, seasonal streams, wetland environments or the potential for wetland development at either of the proposed action sites; therefore, no SOF was prepared as a part of this EA.

##### **4.13.2 National Wetlands Inventory**

The National Wetlands Inventory (NWI) is a department under the U.S. Fish and Wildlife Service (USFWS), a sub-department of the U.S. Department of Interior. NWI produces and provides information on the characteristics, extent, and status of the Nation's wetlands and deepwater habitats and other wildlife habitats. A review of the wetlands inventory is required to determine if a significant change in surface features will occur as a result of construction and may affect the natural area. A review of these maps revealed no known wetlands or habitats indicative of wetlands were located at either parcel.

#### **4.14 Wildlife**

Federal lands operated by the Bureau of Land Management, National Park Service, Forest Service, Fish and Wildlife Service or Bureau of Indian Affairs were searched regarding the location of national parks, forests, monuments, wildlife sanctuaries, preserves, refugees, wilderness areas or Indian reserves relative to the subject site. The Shenandoah National Park is located adjacent to the proposed action sites. This park is operated by the NPS and will not be disturbed during the construction of the expanded turning lanes. Undeveloped woodland property of equal value to the proposed action parcels is being given to the NPS to accommodate the loss to the Shenandoah National Park. This new property is adjacent to Parcel 1.

##### **4.14.1 Threatened and Endangered Species**

The Virginia Department of Game and Inland Fisheries (VDGIF) is one of the agencies responsible for the management of threatened and endangered species in the Commonwealth of Virginia. This information is available through the Virginia Fish and Wildlife Information Service (VFWIS) and through the USFWS. The proposed action would only cause a negligible disruption to wildlife during construction because the project area is small and adjacent properties contain the same habitat characteristics.

A review of the VFWIS for threatened and endangered species detected the potential for Federal or state threatened or endangered species within a three-mile radius of the proposed action sites. During the review of the adjacent Eastham Property, an Informal Biological Assessment (IBA) was conducted; the same species list was observed for the site. The species habitat table provided for the Eastham Property is presented with this report, Appendix D. Based on the habitats observed, the likelihood that these species exist within the proposed action sites is minimal. Consultation with the USFWS will be conducted to verify that these species are not likely to exist or will not be affected as a result of the proposed action after the public review and comment period is completed.

#### **4.15 Vegetation**

The proposed action sites are characterized as having natural communities, which mainly consist of woodland of cedar, oak, poplar, pine trees and undergrowth common in this region. The Virginia Department of Agriculture and Consumer Services (VDACS) has jurisdiction over listed threatened and endangered plant and insect species in Virginia. Based on a review of the threatened and endangered plant species provided through the Natural Resource Conservation Service (NRCS) and compared with the habitats observed in this area it is not likely that threatened or endangered plant species exist in these areas.

#### **4.16 Construction Effects**

Construction of the proposed action will change the natural features of the subject sites since they will become a part of the traffic system. Other construction effects such as increased noise, dust, and disturbances will be minor and short term. Appropriate water control systems will need to be considered during the design and construction of

the proposed action as discussed in earlier sections. Changes in the features of the parcels will not be reversible.

#### **4.17 Public Health and Safety**

During development, construction zones will not be accessible to the general public. This will reduce the risks of injury. Construction workers will be required to follow the health and safety policies of the Virginia Department of Transportation and/or their independent contracting corporation as determined between the contractor and Warren County. Post construction, the proposed action is intended to decrease traffic congestion and reduce the risk of traffic related incidences during peak school hours. Better control on traffic will also decrease the safety risks for pedestrian traffic. However, these risks cannot be eliminated and the safety of automobile, bus and pedestrian traffic is considered minimal and long term.

## 5.0 ENVIRONMENTAL CONSEQUENCES

NEPA requires consideration of context, intensity, and duration of impacts; indirect impacts; cumulative impacts; and measures to mitigate for such impacts. In addition, the NPS requires that potential impairment of park resources be evaluated.

### 5.1 Methodology

Generally, impacts effects, as described in the table in section 5.2, are considered based on the following standards:

- Type – beneficial or adverse,
- Context – site specific, local or regional,
- Duration – short term, (construction or less than one year) or long term (more than one year)
- Intensity – negligible, minor, moderate or major.

Indirect impacts are based on the activities associated with the high school construction and the future land use at the high school. Both construction and post-construction effects were considered.

Cumulative effects are defined by NEPA as “the impact on the environment which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency or person undertakes such actions”. Cumulative effects regarding the proposed action include past (agriculture), present (undeveloped woodland) and future (construction) actions in addition to the intended final use for the parcels as developed roads.

Mitigating effects were not considered for this project. Effects on resources were considered during the design, siting and construction of the new high school and the proposed action.

### 5.2 Direct, Indirect and Cumulative Effects

The proposed action’s potential effects were discussed in phases relative to the construction and operation of the area since construction effects may be different than those present during operation. These actions were also compared to past actions, those of the existing construction and potential future changes.

<b>Table 2: Summary of Potential Cumulative Effects Resulting from the Proposed Action</b>							
<b>Potential Impact Area</b>	<b>Proposed Action</b>			<b>Past Actions<sup>(4)</sup></b>	<b>Indirect Actions<sup>(1)</sup></b>	<b>Future Actions</b>	<b>Cumulative Impact<sup>(2)</sup></b>
	<b>Construction<sup>(3)</sup></b>	<b>Operation</b>	<b>Mitigation</b>				
Land Use	*	NE	NR	NE	*	NP	NE
Air Quality	*	*	NR	NE	*	NP	NE
Water Resources	NE	NE	NR	NE	*	NP	NE
Topography and Soils	*	NE	NR	NE	NE	NP	NE
Environmental Management	NE	NE	NR	NE	NE	NP	NE

<b>Table 2: Summary of Potential Cumulative Effects Resulting from the Proposed Action</b>							
<b>Potential Impact Area</b>	<b>Proposed Action</b>			<b>Past Actions<sup>(4)</sup></b>	<b>Indirect Actions<sup>(1)</sup></b>	<b>Future Actions</b>	<b>Cumulative Impact<sup>(2)</sup></b>
	<b>Construction<sup>(3)</sup></b>	<b>Operation</b>	<b>Mitigation</b>				
Noise	*	*	NR	NE	*	NP	NE
Transportation	*	+	NR	NE	**	NP	+
Ionizing and Non-Ionizing Radiation	NE	NE	NR	NE	NE	NP	NE
Prehistoric and Historic Resources	NE	NE	NR	NE	NE	NP	NE
Environmental Justice	NE	NE	NR	NE	NE	NP	NE
Utilities	NE	NE	NR	NE	*	NP	NE
Socioeconomics	NE	NE	NR	NE	+	NP	NE
Vegetation	*	NE	NR	NE	*	NP	NE
Wildlife	*	NE	NR	NE	*	NP	NE
Aesthetics	*	NE	NR	NE	*	NP	NE
Construction Effects	*	NE	NR	NE	*	NP	NE
Public Health and Safety	*	NE	NR	NE	*	NP	NE
<b>KEY:</b> * low adverse effect    ** moderate adverse effect    *** high adverse effect + beneficial effect    NE no adverse effect    NP none proposed    NR none required							

Notes:

1. Indirect actions are based on the potential effects relative to the construction of the high school since the proposed action correlates directly to the initial development plans of the school.
2. All interpretations of potential cumulative effects resulting from the proposed action as well as past, present and future actions pertain to the actual site of the proposed action and the immediate vicinity.
3. Construction effects under the proposed action are considered to be short-term in duration, whereas operation effects are considered to be of long-term duration.
4. Past actions and others present are based upon current effects and condition of the proposed action site. Cumulative impacts are considered to be the sum of impacts exceeding the brevity of short-term effects. The cumulative effects referenced within this table are based solely on existing conditions including approved permits.

### 5.3 Impairment of Park Resources or Values

Since the NPS and Warren County are negotiating a land swap for property within the same vicinity and of equal value, there is no potential impairment of park resources anticipated or addressed in this EA.

### 5.4 Impacts to Cultural Resources and Section 106 of the NHPA

Section 101(b)(4) of NEPA, as amended, requires that agencies coordinate and plan their actions to “preserve important historic, cultural and natural aspects of our national heritage”. This requires the consideration of impacts on cultural resources either listed in or eligible to be listed in the National Register of Historic Places (NRHP).

A review of historic resources was conducted prior to the draft of this EA. No NRHP were identified that would be impacted based on the proposed action. The term “no adverse effect” means that no impact that alters, directly or indirectly, any characteristic of a cultural resource that qualifies it for inclusion in the National Register

exists. Adverse effects also include reasonably foreseeable effects from future or cumulative actions; this was also addressed by the SHPO during review.

Based on a field survey conducted in the spring and summer of 2005, both by NPS Cultural Resource staff and archaeologists from James Madison University, it has been determined that there are no historic structures, no significant cultural landscape features, and no archaeological resources. The park consulted with the Virginia Department of Historic Resources on August 22, 2005 stating their belief that this exchange will have no effect on historic features. A response was received on August 19, 2005 stating concurrence with the NPS letter regarding cultural resources. Copies of these correspondences are included in Appendix C.

## **5.5 Impact Analysis**

Impact topics are resources of concern that could be affected, either beneficially or adversely, by the range of alternatives. Comparisons were made between the proposed action and the No-Action alternative. However, numerous effects will occur and cannot be reversed as a result of the existing high school construction and would be increased by the No-Action alternative. Specific impact topics of concern will be analyzed in further detail after the public review and comment period and will be presented in subsequent drafts as necessary.

## **6.0 CONSULTATION AND COORDINATION**

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Ed Clark, Resource Protection Ranger, National Park Service

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## 7.0 LIST OF PREPARERS

Draper Aden Associates prepared this EA for Warren County and for use by the NPS. A list of principal participants in the preparations of this EA is listed below:

NAME	RESPONSIBILITY
<ul style="list-style-type: none"><li>Michael D. Lawless, C.P.G. Environmental Program Manager</li></ul>	Project Manager Project Review
<ul style="list-style-type: none"><li>Mike Futrell GIS Administrator</li></ul>	GIS Design and Interpretation
<ul style="list-style-type: none"><li>Karen Weber Staff Geologist</li></ul>	Project Coordinator Principal Investigator Principal Author

## 8.0 REFERENCES

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## **9.0 PROPOSED SCHEDULE**

Current expected posting of this report for public comment and review is August 30, 2005. From this point, the report will be available for thirty days, ending September 30, 2005. The NPS will compile the comments received and use the information to aid in contacting regulatory agencies. A final EA will be compiled with the public comments and regulatory agency information. This will be presented along with a Finding of No Significant Impact (FONSI) letter for final approval. From the date of posting for public comment the process is anticipated to take 60-90 days.

**APPENDIX A**  
**Figures & Plats**

**APPENDIX B**  
**Site Photographs**

**APPENDIX C**  
**Correspondences**

**APPENDIX D**  
**Corroborating Documentation**



**APPENDIX E**  
**Finding of No Significant Impact**  
**(FONSI)**